CLAIMS

What is claimed is:

1. A method of determining susceptibility of a cell to reovirus infection by measuring constitutive ras-MAP signaling in said cell, wherein the presence of said constitutive signaling indicates susceptibility to infection by reovirus.

2. The method of claim 1 wherein the ras-MAP signaling is measured by determining the state of phosphorylation of MAP kinase.

3. The method of claim 2 wherein the state of MAP kinase phosphorylation is determined using an antibody specific for phosphorylated MAP kinase.

4. The method of claim 1 wherein the cell is comprised in a biological sample collected from a mammal suspected of having a proliferative disorder.

5. The method of claim 4 wherein the proliferative disorder is neurofibromatosis.

6. The method of claim 4 wherein the proliferative disorder is a solid neoplasm.

7. The method of claim 4 wherein the proliferative disorder is selected from the group consisting of lung cancer, prostate cancer, colorectal cancer, thyroid cancer, renal cancer, adrenal cancer, liver cancer, pancreatic cancer, breast cancer and central and peripheral nervous system cancer.

8. The method of claim 4 wherein the proliferative disorder is breast cancer.

9. The method of claim 4 wherein the mammal is selected from the group consisting of dogs, cats, sheep, goats, cattle, horses, pigs, mice, non-human primates, and humans.

10. The method of claim 4 wherein the mammal is human.

11. A method of treating a proliferative disorder in a mammal, which disorder is characterized by proliferating cells which exhibit constitutive MAPK phosphorylation, comprising administering to the proliferating cells in said mammal an effective amount of one or more reoviruses under conditions which result in substantial lysis of the proliferating cells.

12. The method of Claim 11 further comprising a step selected from the group consisting of: administering to the proliferating cells in said mammal an effective amount of an immune suppressive agent; removing B-cells or T-cells from said mammal; removing anti-reovirus antibodies from said mammal; removing antibodies from said mammal; administering anti-antireovirus antibodies to said mammal; and suppressing the immune system of the mammal.

13. The method of Claim 11, wherein the reovirus is selected from the group consisting of a mammalian reovirus and an avian reovirus.

14. The method of Claim 13, wherein the reovirus is a mammalian reovirus.

15. The method of Claim 14, wherein the reovirus is a human reovirus

16. The method of Claim 15, wherein the reovirus is selected from the group consisting of serotype 1 reovirus, serotype 2 reovirus and serotype 3 reovirus.

17. The method of Claim 16, wherein the reovirus is serotype 3 reovirus.

18. The method of Claim 13, wherein the reovirus is an avian reovirus.

19. The method of Claim 11, wherein more than one type of reovirus is administered.

20. The method of Claim 11, wherein more than one strain of reovirus is administered.

21. The method of Claim 11, wherein the reovirus is a field isolate.

22. The method of Claim 11, wherein the proliferative disorder is a neoplasm.

23. The method of Claim 11, wherein the proliferative disorder is neurofibromatosis.

24. The method of Claim 22, wherein the neoplasm is a solid neoplasm.

25. The method of Claim 22, wherein the neoplasm is selected from the group consisting of lung cancer, prostate cancer, colorectal cancer, thyroid cancer, renal cancer, adrenal cancer, liver cancer, pancreatic cancer, breast cancer and central and peripheral nervous system cancer.

26. The method of Claim 22, wherein the neoplasm is a central nervous system cancer.

27. The method of Claim 22, wherein the neoplasm is breast cancer.

28. The method of Claim 22, wherein the neoplasm is a hematopoietic neoplasm.

29. The method of Claim 24, wherein the reovirus is administered by injection into or near the solid neoplasm.

30. The method of Claim 11, wherein the reovirus is administered intravenously into the mammal.

31. The method of Claim 11, wherein the reovirus is administered intraperitoneally into the mammal.

32. The method of Claim 11 wherein the mammal is immunocompetent.

33. The method of Claim 11 wherein the reovirus is immunoprotected.

34. The method of Claim 11 wherein the reovirus is encapsulated in a micelle.

35. The method of Claim 11, wherein the mammal is a human.

36. The method of Claim 11, wherein approximately 1 to 10^{15} plaque forming units of reovirus/kg body weight are administered.

37. The method of Claim 11, wherein the reovirus is administered in a single dose.

38. The method of Claim 11, wherein the reovirus is administered in more than one dose.

39. The method of Claim 22, wherein the neoplasm is metastatic.

40. The method of Claim 11 further comprising the administration of an effective amount of a chemotherapeutic agent.

41. The method of Claim 11, wherein the reovirus is treated with a protease prior to administration.

42. The method of Claim 22, wherein the neoplasm is pancreatic cancer.

43. The method of Claim 22 further comprising surgical removal of the substantially all of the neoplasm and administration of the reovirus to the surgical site in an amount sufficient to result in substantial oncolysis of any remaining neoplastic cells.

44. A method of treating a neoplasm in a human, which neoplasm is characterized by proliferating cells which exhibit constitutive MAPK phosphorylation, comprising administering to the neoplasm a reovirus in an amount sufficient to result in substantial oncolysis of the neoplastic cells.

45. The method of Claim 44 wherein said reovirus is administered by injection into or near a solid neoplasm.

46. The method of Claim 44 further comprising a step selected from the group consisting of: administering to the proliferating cells in said mammal an effective amount of an immune suppressive agent; removing B-cells or T-cells from said mammal; removing anti-reovirus antibodies from said mammal; removing antibodies from said mammal; administering anti-antireovirus antibodies to said mammal; and suppressing the immune system of the mammal.

47. A method of inhibiting metastasis of a neoplasm in a mammal, which neoplasm is characterized by proliferating cells which exhibit constitutive MAPK phosphorylation, comprising administering to the mammal a reovirus in an amount sufficient to result in substantial lysis of the neoplastic cells.

48. The method of Claim 47 further comprising a step selected from the group consisting of: administering to the proliferating cells in said mammal an effective amount of an immune suppressive agent; removing B-cells or T-cells from said mammal; removing anti-reovirus antibodies from said mammal; removing antibodies from said mammal; administering anti-antireovirus antibodies to said mammal; and suppressing the immune system of the mammal.

49. A method of treating a suspected neoplasm in a mammal, which neoplasm is characterized by proliferating cells which exhibit constitutive MAPK phosphorylation, comprising surgical removal of substantially all of the neoplasm and administration of an effective amount of reovirus at or near to the surgical site resulting in oncolysis of any remaining neoplastic cells.

50. The method of Claim 49 further comprising a step selected from the group consisting of: administering to the proliferating cells in said mammal an effective amount of an immune suppressive agent; removing B-cells or T-cells from said mammal; removing anti-reovirus antibodies from said mammal; removing antibodies from said mammal; administering anti-antireovirus antibodies to said mammal; and suppressing the immune system of the mammal.